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**UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION**

In Re
PG&E CORPORATION
v.
AECOM TECHNICAL SERVICES, INC.

Case No. 4:20-cv-05381-HSG (Lead Case)

(Reference withdrawn from Bankruptcy
Case No. 19-30088, Adv. Proc. No. 20-
03019 and Adv. Proc. No. 19-03008)

(Consolidated with Case No. 3:20-cv-
08463-EMC)

**AECOM TECHNICAL SERVICES,
INC.'S MOTION TO EXCLUDE
TESTIMONY OF DR. WILLIAM IBBS
REGARDING LOSS OF
PRODUCTIVITY**

Date: May 31, 2022
Time: 11:00 a.m.
Location: Courtroom 2, 4th Floor

PLEASE TAKE NOTICE THAT on May 31, 2022 at 11:00 a.m. in Courtroom 2 of the
above-entitled Court, located at the Ronald V. Dellums Federal Building & United States
Courthouse, 1301 Clay Street, Oakland, California 94612, Defendant and Counter-Claimant
AECOM TECHNICAL SERVICES, INC. ("AECOM") will and hereby does move the Court for

1 an order to exclude the expert opinions and testimony of Plaintiff and Counter-Defendant J.H.
2 KELLY, LLC's ("JH Kelly") expert witness Dr. William Ibbs.

3 The Motion is based upon this Notice of Motion and Motion, the following Memorandum
4 of Points and Authorities, the Declaration of Marion Hack, the pleadings and other documents
5 filed in this action, and any argument that the Court may entertain at the hearing on this Motion.

6 This Motion is also based on Federal Rule of Evidence 702 and *Daubert v. Merrell Dow*
7 *Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

8
9 Dated: April 14, 2022

TROUTMAN PEPPER HAMILTON
SANDERS LLP

10
11 By: /s/ Luke N. Eaton
12 MARION T. HACK
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MEMORANDUM OF POINTS AND AUTHORITIES

I. INTRODUCTION

JH Kelly was AECOM's subcontractor on a construction project known as the Burney Compressor Station (the "Project"), which is owned and operated by PG&E. JH Kelly claims sums are due from AECOM for JH Kelly's work on the Project, specifically JH Kelly claims that excessive changes caused disruption and a loss of productivity in its labor which it labels "schedule and productivity impacts." Dkt. 102 at ¶49. JH Kelly retained Dr. William Ibbs to quantify the impact of changes allegedly imposed on JH Kelly by AECOM.

In an effort to quantify JH Kelly's productivity losses, Dr. Ibbs claims to have performed four separate analyses utilizing four different methodologies for measuring loss of productivity – (1) Measured Mile; (2) Ibbs Curve; (3) MCAA Factors and (4) Modified Total Cost. See Declaration of Marion T. Hack ("Hack Decl.") at ¶ 4, Ex. 1, Ibbs 2021 Report, ¶228. Each method comes out to roughly the same amount of loss. *Id.* at ¶286, Table 20.

Damage Category 1 Quantification Method	D&D Damages
Measured Mile	\$ 8,465,712
IBBS Curves	\$ 8,806,423
MCAA Factors	\$ 8,624,734
Modified Total Cost	\$ 8,941,595
Average	\$ 8,709,616

At first blush, this appears to be a reasonable approach. But, in looking deeper at the analysis, it becomes clear that Dr. Ibbs subjectively manipulates three of the methodologies to arrive at a number similar to the fourth method, the impermissible total cost approach¹, which conveniently matches JH Kelly's total job cost losses on the Project. Each of the first three methods require subjective interpretation of the data, which can be lowered and raised as needed.

¹ The Total Cost method of computing job losses simply takes the amount spent on a job and deducts the amount received to come to an amount of damages. This method untethers the loss of productivity to any causation because the loss is not tracked to any specific change to the project. **As explained in AECOM's dispositive motion concurrently filed, the total cost method should not be allowed because it is a disfavored method as a means of calculating damages as it does not consider causation when determining losses on a project.** See *Amelco Elec. v. City of Thousand Oaks*, 27 Cal. 4th 228, 243 (2002).

1 The total job cost loss is a simple mathematical calculation of the amount of loss on the Project
 2 not tied to any causation.

3 As addressed in more detail herein, all of Dr. Ibbs' damages calculations run afoul of Rule
 4 702, which demands that expert testimony relate to scientific, technical or other specialized
 5 knowledge, and does not include **unsubstantiated speculation** and **subjective** beliefs. *See, e.g.,*
 6 *Diviero v. Uniroyal Goodrich Tire Co.*, 114 F.3d 851, 853 (9th Cir. 1997). Further, Dr. Ibbs'
 7 manipulation of each method is used to come to a predetermined result – to match the total job
 8 cost losses allegedly incurred by JH Kelly. By doing this, Dr. Ibbs is attempting to lend
 9 credibility to his analysis where none actually exists. This is intended to persuade the jury into
 10 thinking that the productivity losses are real when they are only a subjective determination of loss
 11 with no actual tie to causation, no proper foundation and lack the necessary reliability to allow
 12 them to be submitted to the jury. As such, because Dr. Ibbs' loss of productivity opinions are
 13 inherently unreliable, speculative, and violate Rule 702, they must be excluded from trial.

14 **II. THE COURT ACTS AS A GATEKEEPER FOR ADMISSIBILITY OF EXPERT** 15 **TESTIMONY**

16 The trial judge has the task of ensuring that expert testimony both rests on (i) reliable
 17 foundation and (ii) is relevant to the task at hand. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,
 18 509 U.S. 579, 592 (1993); *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 149 (1999) (Rule
 19 702 imposes special obligation to ensure that expert's testimony "is not only relevant but
 20 reliable."). Federal Rule of Evidence 702 provides that "[a] witness who is qualified by
 21 knowledge, skill, experience, training, or education may testify in the form of an opinion or
 22 otherwise if:

23 (a) the expert's scientific, technical, or other specialized knowledge
 24 will help the trier of fact to understand the evidence or to determine
 a fact in issue;

25 (b) the testimony is based on sufficient facts or data;

26 (c) the testimony is the product of reliable principles and methods;
 27 and

28 (d) the expert has reliably applied the principles and methods to the
 facts of the case.

1 All three analyses objected to herein fail the Rule 702 test.

2 First, while the Measured Mile approach is an accepted methodology, Dr. Ibbs has not
3 reliably applied this calculation method to the facts of the case in violation of Rule 702(d).
4 Second, the Ibbs Curve violates Rule 702(c) as it is not a reliable method, **having never been**
5 **accepted in either Federal or State courts as a method of proving loss of productivity.**
6 AECOM is not aware of any case where a court has endorsed the use of the Ibbs Curve as a
7 proper and reliable methodology to quantify loss of productivity. This Court should not be the
8 first to do so, as the requirements set out in *Daubert* are not met. The Ibbs Curve is an academic
9 study meant for the classroom setting, not a jury trial. Third, the MCAA analysis is also a
10 disfavored method of quantification of damages and the evidence confirms that Dr. Ibbs
11 manipulated the subjective factors to come to a predetermined result in violation of Rule 702(d).

12 “Maintaining Daubert’s standards is particularly important considering the aura of
13 authority experts often exude, which can lead juries to give more weight to their testimony.”
14 *Elsayed Mukhtar v. California State University, Hayward*, 299 F.3d 1053, 1064-65, overruled on
15 other grounds by *Estate of Barabin v. AstenJohnson, Inc.*, 740 F.3d 457, 467 (9th Cir. 2014).
16 This is exactly the issue here. Dr. Ibbs has a PhD from UC Berkeley and he undoubtedly will
17 testify that he is considered the preeminent expert on productivity losses, but that does not mean
18 that he gets a free pass. Dr. Ibbs attempts to lend his credibility to an analysis which is nothing
19 more than a transparent guise to come to a favorable result for his client – a client who has paid
20 approximately \$1.9 million for this “analysis” through November 2021.

21 “*Daubert* maintained that district court judges would continue to act as gatekeepers, and it
22 listed four nonexclusive factors that would assist in the separation of inadmissible opinions based
23 on junk science from admissible opinions developed by the scientific method. District court
24 judges are to consider not only (1) whether the method has gained general acceptance in the
25 relevant scientific community, but also (2) whether the method has been peer-reviewed, (3)
26 whether the method can be (and has been) tested, and (4) whether there is a known or potential
27 rate of error.” *Lust by & Through Lust v. Merrell Dow Pharm.*, 89 F.3d 594, 597 (9th Cir. 1996)
28 (internal citations omitted).

Below, AECOM will demonstrate exactly how Dr. Ibbs subverts these productivity methods to come to the result his client has paid for – a recovery of all losses on the project without the burden of linking those losses to any causation.²

III. IBBS' CALCULATIONS FOR STAFF AND SUBCONTRACTOR DELAY/DISRUPTION COSTS ARE MERE SPECULATION

Despite purporting to apply different methodologies to JH Kelly's staff and subcontractor hours, Dr. Ibbs does not perform any analysis for \$3,442,823 of JH Kelly's purported damages. Instead he uses **identical** "modified" total cost numbers in each of his calculations: Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶255, Table 14, ¶266, Table 15, ¶274, Table 18.

Staff Delay and Disruption Cost	\$ 835,386
Subcontractor Delay and Disruption Cost	\$ 2,460,777
Remaining Time Related Delay Costs	\$ 146,660

These same numbers – which total \$3,442,823 – are repeated in each of the three productivity loss calculations and baked into the fourth modified total cost calculation. Thus, almost 40% of each purported independent loss of productivity calculation is exactly the same impermissible total cost calculation. As the court can see, if \$3.5 million of each methodology is exactly the same, it is not hard to get the rest of the calculations to approximately match. Put a different way, Dr. Ibbs has not even attempted to calculate causation for these amounts but instead uses these loss numbers across the board in his four purported methodologies.

Dr. Ibbs simply takes the total subcontractor and staff cost overruns on the project and subtracts .28% – the amount he quantified for JH Kelly's self-inflicted problems – from the total costs. In fact, Dr. Ibbs ***admits that he had no basis*** to calculate the subcontractor loss.

² As cited as cited in Dr. Ibbs' article, *Damages; Modified Total Cost Principles For Cumulative Impact Claims*, The Construction Lawyer, Winter 2013 "In *McKie v. Huntley* [620 N.W.2d 599 (S.D. 2000)], by way of contrast, the court chastised Huntley for not having proved damages and causation and therefore refused MTC use: Properly considered, this approach [the MTC] is not a substitute for proof of causation; it is simply a method for calculating damages. As in every breach of contract case, causation must be established before damages can be recovered. Causation is often most difficult to prove in cases where the owner, the contractor, and the subcontractor all have some culpability (e.g., in *Boyajian* and *Raytheon*). In these instances, the prime contractor may have to demonstrate that both its work and that of its subcontractors would have been mistake-free but for the owner." Hack Decl. ¶7, Exhibit 4.

1 Q. Well, Dr. Ibbs, you didn't do any actual calculation as to what --
 2 you didn't do any investigation as to what the subcontractors could
 have actually caused on their own, did you?

3 **A. I -- I -- I -- I didn't have that level of information. I used what**
 4 **was self-inflicted problems for Kelly, and I applied that to the**
 5 **other subs. That was the best information that I had available. I**
 didn't have any other quantitative information that would allow
 me to particularize it to the subs beyond that.

6 Hack Decl. ¶5, Ex. 2, Ibbs Deposition, 144:23-145:7.

7 Dr. Ibbs conducted absolutely no analysis or investigation to confirm that the staff or
 8 subcontractors experienced similar productivity impacts or similar self-inflicted cost overruns to
 9 that of JH Kelly's craft labor, but nevertheless applied the same loss factor of only .28% to these
 10 costs. Dr. Ibbs simply *assumed* that AECOM was responsible for 99.72% of all of JH Kelly's
 11 staff and subcontractor cost overruns. There is nothing reliable about this opinion.
 12 Unsubstantiated speculation of this kind is to be excluded. *See, e.g., Diviero v. Uniroyal*
 13 *Goodrich Tire Co.*, 114 F.3d 851, 853 (9th Cir. 1997); *Mullins v. Premier Nutrition Corp.*, 178 F.
 14 Supp. 3d 867, 888 (N.D. Cal. 2016) ("Ultimately, the purpose of the assessment is
 15 to exclude speculative or unreliable testimony to ensure accurate, unbiased decision-making by
 16 the trier of fact.") As such, AECOM respectfully requests that the Court exclude, at a minimum,
 17 Dr. Ibbs' speculative testimony concerning this \$3,442,823 in alleged subcontractor and staff
 18 "delay and disruption" costs.

19 **IV. THE MEASURED MILE ANALYSIS MUST BE EXCLUDED.**

20 "The measured mile methodology compares the productivity attained in one physical area
 21 or time period of the Project that has been disrupted by changes against the productivity in
 22 another area, or baseline period, that is unimpacted or minimally impacted." Hack Decl. ¶4, Ex.
 23 1, Ibbs 2021 Report, ¶236 ("The use of 'measured mile' analysis developed by a qualified expert
 24 is recognized as the most reliable, though not exact, methodology to quantify labor
 25 inefficiency."); *see also U.S. Industries, Inc. v. Blake Construction Co.*, 671 F.2d 539, 547 (D.C.
 26 Cir. 1982); *Luria Bothers & Co. v. United States*, 369 F.2d 701 (Ct. Cl. 1966). Dr. Ibbs writes
 27 that "[t]he classical measured mile approach and its variants are commonly accepted because they
 28 can demonstrate causation and resultant injury for cumulative impact claims ... the classical

measured mile analysis is favored, but the other methods can be the best choice depending on the situation.” Hack Decl. ¶8, Ex. 5, Dr. Willam Ibbs, Long D. Nguyen, *Claims/Damages: Using the Classical Measured Mile Approach and Variants to Quantify Cumulative Impact Claims*, The Construction Lawyer, Winter 2012, at p. 11. As acknowledged by Dr. Ibbs, the measured mile is not the appropriate methodology in all circumstances, such as the case here.

As Dr. Ibbs himself admits, the measured mile approach must match another loss of productivity approach in order for the analysis to be reliable -- “[t]he quantitative results derived from the measured mile analysis are not always repeatable, leading to low confidence in the resulting analysis. Often two methods are used to compare results as a check but end up with seemingly wide variances observed that cannot be easily understood or reconciled.” Hack Decl. ¶9, Ex. 6, Joseph C. Kovars, Dr. William Ibbs, Paul L. Stynchcomb, *Pros and Cons of Using Industry Studies to Quantify Loss of Labor Productivity*, The Construction Lawyer, Winter 2016, at pp. 6-7. This is precisely the problem, this analysis is not repeatable, which runs afoul to *Daubert*. Because of this inherent problem with the measured mile approach on this project, Dr. Ibbs manipulated his analysis in order to ensure it matches his total cost analysis.

Dr. Ibbs ignores the industry-accepted requirements for applying this methodology:

The traditional measured mile method relies upon a comparison of labor productivity of **identical activities occurring in both unimpacted and impacted periods or segments** of the same project in order to quantify the lost productivity resulting from the disrupting events for which the claimant bears no responsibility.³

Yet, Dr. Ibbs does not compare identical or even reasonably similar work in his analysis. Instead, Dr. Ibbs compares the productivity of one trade activity on the project – main gas piping -- to the productivity of all other trades on the project, including one of the largest trades, electrical. This

³ See Hack Decl. ¶10, Ex. 7, Daniel E. Toomey; Joshua S. Marks; Dr. Tong Zhao, P.E.; and J. Mark Dungan, *Calculating Lost Labor Productivity: Is There a Better Way?*, The Construction Lawyer, Spring 2015, at p. 6 (“The obvious advantage of the measured mile method over other approaches is that it relies on actual performance achieved on the same work from the same project, thereby eliminating most disputes over the validity of cost estimates, or productivity-impacting factors for which the claimant is not liable.”) Courts have agreed to modify this strict approach to **identical** activities **only** if the comparison of the work are “reasonably alike” such that the approximations it involves will be meaningful. *Clark Concrete Contractors, Inc. v. General Services Administration*, GSBGA No. 14340 (March 15, 2019).

1 is where Dr. Ibbs' analysis fails and the reason that it must be excluded. This is simply an
2 incorrect application of this methodology.

3 This application of the measured mile is not accepted in the industry, and is not even
4 accepted by Dr. Ibbs himself. See Hack Decl. ¶11, Ex. 8, William Ibbs, *Practical Ways to*
5 *Identify Measured Miles*, J. Leg. Aff. Dispute Resolut. Eng. Constr., 04516007, at p. 3 (Dr. Ibbs
6 acknowledges "the work performed during the mile should be substantially similar in type,
7 nature, and complexity to the work that was affected."). Dr. Ibbs confirms, "[t]he measured mile
8 analysis technique requires identical or substantially similar work for productivity comparisons.
9 If the affected work is unique, or if the contractor did not keep good contemporaneous records, no
10 measured mile may exist." See Hack Decl. ¶8, Ex. 5, *Claims/Damages: Using the Classical*
11 *Measured Mile Approach and Variants to Quantify Cumulative Impact Claims*, William Ibbs and
12 Long Nguyen, *The Construction Lawyer*, Winter 2012, at p. 2. "Measured mile analysis is most
13 credible because it directly compares productivities of the **same work** between impacted and
14 unimpacted periods". *Id.*

15 As admitted by Dr. Ibbs, "[i]t would not be valid to compare the rate for the production
16 of large widgets during the pre-disruption (normal) period with the production of smaller widgets
17 during the disruption period." *P.W. Constr., Inc. v. United States*, 53 F. App'x 555, 557 (Fed. Cir.
18 2002). There, "[t]he pre-disruption period rate in this case did not include intensive welding and
19 trenching work performed by subcontractors, but the impaired rate included such work.
20 Additionally, the rates did not consider whether productivity would be affected if PWCI used
21 steel versus polyethylene pipe." *Id.* There, the Court of Appeal vacated the damages award
22 based on such an improper calculation. Nevertheless, Dr. Ibbs ignores the industry requirements
23 for a measured mile analysis and applies the same productivity loss across distinct and different
24 types of work.

25 In his report, Dr. Ibbs calculated the alleged disruption in the main gas piping scope to be
26 36.1% and then applied that calculation to **all other scopes of work**. Hack Decl. ¶4, Ex. 1, Ibbs
27 2021 Report, ¶251. In this instance, Dr. Ibbs' analysis is not credible or reliable because it does
28

1 not compare the same or substantially similar scopes. In fact, Dr. Ibbs admits that the electrical
2 work is inherently different from main gas piping –

3 Another possible candidate for the measured mile reference is the
4 electrical work, but the scope change and impacts on this Project
5 were significant **and made the electrical work a completely**
6 **different experience than the rest of the Project.** For instance,
7 portions of the electrical work, such as “terminations,” involve fine
8 motor skills, whereas piping, steel erection, and concrete work are
9 more “bull work” and are more representative of the overall project.
10 Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶243 (emphasis added)

11 By extrapolating the productivity loss for a *single* trade across *all* craft labor, any
12 conclusions drawn are simply not reliable and completely ignores causation. Like all
13 construction claims for damage, loss of productivity must be tied to causation. See *Wunderlich*
14 *Contracting Co. v. United States*, 351 F.2d 956, 969 (Ct. Cl. 1965) Dr. Ibbs acknowledges the
15 importance of proving causation in a productivity claim, but nonetheless fails to do so in his
16 analysis. See Hack Decl. ¶8, Ex. 5, (“It is no easy task to quantify the cumulative impacts of
17 multiple changes on a construction project. One reason is that the prerequisites for proving a
18 cumulative impact claim--liability, causation, and resultant injury--are rigorous ... Demonstrating
19 causation requires the contractor to prove that the inefficiency was caused by the owner’s
20 changes.”) Causation is particularly important due to the nebulous nature of a loss of productivity
21 claim.⁴ By using productivity loss in main gas piping to show productivity losses in other
22 unrelated and dissimilar trades, Dr. Ibbs completely avoids having to prove causation for losses in
23 those trades – and those trades make up over 90% of the project.

24 Dr. Ibbs is also on record stating the following:

25 A large number of change orders do not guarantee the contractor the
26 right to a cumulative impact claim. **It is simply not sufficient to**
27 **label an apparent productivity loss as the consequence of**
28 **multiple changes. Many cumulative impact claims fail because**
the claimants do not establish a proper causal link between the
changes and the lost productivity.

⁴ A recent article acknowledged the inevitability of *Daubert* challenges to loss of productivity claims. “This should not be surprising, principally because, almost invariably, proof of loss of productivity is particularly dependent on expert witness opinions that are often based on a rather subjective and selective analysis of the documentation supporting labor inefficiencies and often the difficulty in ascertaining the necessary causal connection between the impact of disruptions and their adverse effect on productivity.” *Supra*, at Footnote 3.

Productivity can be lost for numerous other reasons for which the owner has no responsibility including contractor underestimating and inefficiencies (poor planning and organization), weather conditions, etc.

In order to put forward a claim for cumulative impact, a contractor must demonstrate that there is a causal link between the lost productivity and the changes affecting the contract work. Some ways to do this include the development of a cause and effect matrix, or a measured mile analysis qualified with details of the changes. It is also necessary to demonstrate entitlement by proving that while individual change orders were being completed, the cumulative impact was either not foreseeable, not quantifiable, otherwise not included or not allowed when pricing the individual change orders.

Hack Decl. ¶13, Ex. 10, Dr. William Ibbs and Gerald McEniry, CFCC PSP, *Evaluating the Cumulative Impact of Changes on Labor Productivity—an Evolving Discussion*, Cost Engineering Vol. 50/No. 12, December 2008, at p. 27 (emphasis added).

Dr. Ibbs did not show any causation for the remaining trades. Here, the facts show that the actual labor for main gas piping of 10,677 hours represents only 7.1% of the actual craft labor hours for all trades. Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶253. And yet, Dr. Ibbs applied the same productivity loss factor to the remaining 92.9% of the work, when even he acknowledges that the work is not similar. Hack Decl. ¶5, Ex. 2, Ibbs Deposition, 118:19-119:1 (“Would you say they're sufficiently similar in order to extrapolate? A. There's different types of electrical. Termination work is not the same as branch and wire work and termination is not the same as piping or concrete or -- certainly not sufficiently similar to piping or concrete or ironwork.”) That is the point, the work is different.⁵ Therefore there is no reasonable basis to apply the same productivity loss factor to all of the different scopes of work.

In fact, when AECOM's expert calculated the losses for electrical branch wire installation, it determined the productivity loss to be less than that of main gas piping. Hack Decl. ¶14, Ex. 11, Gonzales Rebuttal Report, p. 49. Thus, if Dr. Ibbs used this electrical work activity to

⁵ This approach has been rejected because analysis did not account for lack of similarity of the work. N. Am. Mech., Inc. v. Walsh Constr. Co. II, LLC, 132 F. Supp. 3d 1064, 1080 (E.D. Wis. 2015) (Expert's “average inefficiency rate would be appropriate **only if** all of the hours spent working on the Project consisted of one of the three different types of work that he used in his comparison—installing ductwork through walls, installing pipe through walls, and installing drainpipe through walls. And each of those tasks would have to represent the same percentage of the total Project as they did of the sample size—because each made up a different percentage of the overall inefficiency percentage. No evidence was introduced to support such a conclusion.”) (emphasis added).

1 compare to the other trade activities then JH Kelly's productivity losses **would have been far**
2 **lower**. Despite never performing any measured mile analysis for any trades other than main gas
3 piping, Dr. Ibbs assumes that same productivity loss factor applied to those trades. By applying
4 the same productivity loss factor to all trades, Dr. Ibbs creates an artificially high number for
5 productivity loss – which is exactly why this analysis is unreliable and must be excluded. It is
6 even more unreliable when some trades appear to show productivity gain. For example, the
7 installation of feeder wire is showing a productivity gain according to JH Kelly's own job cost
8 records. Hack Decl. ¶17, Ex. 14, Deposition Exhibit 206, p. 34. But Dr. Ibbs nonetheless applied
9 his main gas piping productivity loss factor to that scope, trying to bypass the causation
10 requirement, which he himself acknowledges is paramount.

11 Dr. Ibbs' manipulation of the numbers does not stop there. In his 2019 report, Dr. Ibbs
12 calculated a 62.7% loss in main gas piping, or a total of 5,772 hours lost – using the time period
13 of September 3 to October 22, 2017 (Hack Decl. ¶ 14, Ex. 11, Gonzales Rebuttal Report, p. 55),
14 but in his 2021 report Dr. Ibbs only calculated a 36.1% loss, or a total of 2,887 hours lost – using
15 the time period August 6, 2017 to October 29, 2017. *Id.* Dr. Ibbs' changes to his initial
16 productivity loss calculation should result in a reduction of the overall labor disruption cost by
17 \$2,486,012, but by manipulating the numbers, the overall reduction in the total disruption cost is
18 only \$482,105. *Id.* Dr. Ibbs achieves his pre-designated result by adding in a separate
19 "Subcontractor Delay and Disruption Cost" of \$2,460,777 and a "Remaining Time Related Delay
20 Cost" of \$146,660 that was not even included in his 2019 report. As discussed above, these
21 amounts are not measured mile calculations at all, but instead are calculated using a modified
22 total cost analysis. There is no analysis by Dr. Ibbs or any basis to conclude that the measured
23 mile productivity loss by subcontractors and staff would be the same as the craft labor installing
24 the main gas piping. Indeed, there is nothing in the underlying measured mile methodology
25 which allows this application, and therefore this analysis must be excluded.

26 In addition, the lack of repeatability of this analysis is highlighted by the fact that the
27 measured mile numbers fluctuated wildly between his 2019 and 2021 reports –

- 28 1. Labor loss of productivity cost went from \$5,670,554 to \$3,311,947.

2. Staff loss of productivity cost went from \$305,195 to \$835,386.
3. Equipment loss of productivity cost went from \$2,073,263 to \$1,003,614
4. Added new loss category for subcontractor loss in the amount of \$2,460,777.
5. Added new loss category for “remaining time related delay costs” of \$146,660.

Compare Hack Decl. ¶6, Ex. 3, Ibbs 2019 report, ¶261, Table 14, *with* Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶274, Table 18. There is no analysis to substantiate these new numbers, nor any assessment of how subcontractors in different trades experienced productivity losses. Indeed, Dr. Ibbs’ own reports demonstrate that his analysis is not repeatable or testable and therefore fails the *Daubert* test.

Dr. Ibbs’ decision to change the measured mile time period, which substantially changed the purported losses, further highlights the subjective nature of this analysis. In his 2019 analysis, Dr. Ibbs calculated an \$8,947,817 productivity loss, while the total job cost loss on the project was only \$8,941,595. *Compare* Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶286, Table 20, *with* Hack Decl. ¶6, Ex. 3, Ibbs 2019 report, ¶259. Therefore, his initial measured mile analysis for productivity actually exceeded the total job cost loss showing on JH Kelly’s accounting records – which is not accurate or possible. The ability, and willingness, to manipulate the numbers to arrive at a pre-designated outcome causes the analysis to be unreliable and fails the stringent test set forth in *Daubert*. Based on the foregoing, JH Kelly should be precluded from introducing such unreliable opinions to the jury.

V. THE IBBS’ CURVE ANALYSIS IS NOT AN ACCEPTED METHOD OF QUANTIFYING LOSS OF PRODUCTIVITY

Dr. Ibbs also improperly relied upon his own research study, the “Ibbs Curve”, to determine loss of productivity. Dr. Ibbs uses this academic study to come to a result which again closely matched the total cost lost by JH Kelly on the Project. Dr. Ibbs apparently has a “database” of historical projects which experienced loss of productivity. He used the lost productivity statistics in this database to create a chart of productivity loss “curves” that compares the amount of change with the time the changes are made to come to a productivity loss calculation. The way the “curves” work is that Dr. Ibbs first determines whether the project was

an “early change”, “median change” or “late change” project and then applies a productivity loss factor to the project based on how other projects were impacted by the timing of changes. Under this analysis, Dr. Ibbs makes no attempt to actually quantify the productivity loss experienced on *this* project, but simply assumes that it would have experienced productivity loss similar to that of the other projects in his database. Dr. Ibbs’ curves chart is as follows:

The first problem with this analysis is it has **never been accepted in any forum** as a reliable method of proving loss of productivity. One commentator acknowledged that Dr. Ibbs’ curves study “has not yet been endorsed by the industry. Like many of the previous studies, this

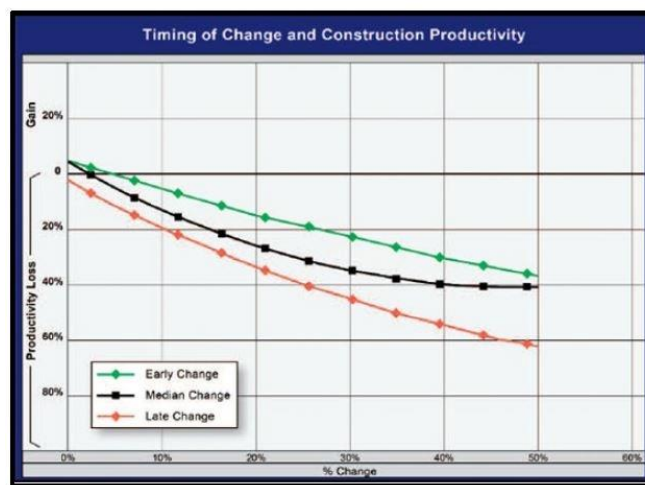


Figure 41: Timing of Change and Construction Productivity

relatively recent research has not yet been discussed in the published U.S case law.” See Hack Decl. ¶12, Ex. 9, Gerald McEinry, *The Cumulative Effect of Change Order on Labour Productivity – the Leonard Study “Reloaded,”* The Revay Report, Vol. 26, Number 1, May 2007, at p. 6. “The proponent of the expert testimony has the burden of establishing Rule 702’s admissibility requirements by a preponderance of the evidence. See Fed. R. Evid. 702 Advisory Committee’s Note. As the Ninth Circuit held in *United States v. Alatorre*, 222 F.3d 1098, 1100 (9th Cir. 2000), the Court need not conduct a separate, pretrial evidentiary hearing to determine the admissibility of the proffered expert testimony.” *Novalogic, Inc. v. Activision Blizzard*, 41 F. Supp. 3d 885, 895 (C.D. Cal. 2013). Here JH Kelly cannot meet that burden.

The second problem is there is no way to verify Dr. Ibbs’ chart because the database is proprietary and was not produced in discovery. “The key question to be answered when determining reliability is whether a methodology is testable.” *Daubert*, 509 U.S. at 593. “Under

1 Daubert’s testability factor, the primary requirement is that [s]omeone else using the same data
 2 and methods . . . be able to replicate the result[s].” *City of Pomona v. SQM N. Am. Corp.*, 750
 3 F.3d 1036, 1047 (9th Cir. 2014). “Testability assures the opponent of proffered evidence the
 4 possibility of meaningful cross-examination (should he or someone else undertake the testing).”
 5 *Id.* at 1046. AECOM has had no opportunity to review the underlying data or cross-examine Dr.
 6 Ibbs using the same. Indeed, there is no way for AECOM, the jury or the court to confirm that
 7 the projects in this database are similar in nature to the project at hand.

8 Likewise, this academic study cannot be peer tested because the underlying data is not
 9 available to the public. It is proper to exclude expert testimony where there is insufficient
 10 evidence that analysis “has been tested in accordance with proper scientific methodology, that the
 11 articles were subject to peer review, or that the theory is generally accepted in the relevant (or
 12 any) scientific community.” *See Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 149-50,
 13 (1999); *M.A.C. v. City of L.A.*, No. CV 16-4477-DMG (AJWx), 2018 U.S. Dist. LEXIS 238114,
 14 at *8 (C.D. Cal. Jan. 24, 2018) (excluding expert testimony); *see Domingo ex. rel. Domingo v.*
 15 *T.K.*, 289 F.3d 600, 606-07 (9th Cir. 2003) (doctor’s causation theory was not generally accepted,
 16 unsupported by any publication, and unjustifiably extrapolated from animal studies to humans).
 17 Even if the chart was reliable, for which there is no way to verify that it is, it still relies on a
 18 subjective interpretation of the loss. For this reason alone, this analysis must be excluded.

19 Lastly, the subjective nature of how this so-called study is used is suspect. Here, in his
 20 2021 report, Dr. Ibbs determined that 23.9% of the work scope performed by JH Kelly was
 21 “changed work”, i.e., allegedly different from the scope originally anticipated at the time the
 22 project was bid. Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶267.⁶ This calculation makes no effort
 23 to tie the change to a specific cause, but instead Dr. Ibbs merely takes purported labor hours in JH
 24 Kelly’s change order requests⁷ and divides by the total labor hours. Dr. Ibbs then makes the
 25 subjective determination that this was a “late change” project, which is the most favorable

26 _____
 27 ⁶ In his 2019 report, Dr. Ibbs previously determined a change of 50%, more than double his current
 calculation. *See* Hack Decl. ¶6, Ex. 3, Ibbs 2019 Report, ¶278.

28 ⁷ Many of these change order requests were disputed by AECOM and/or PG&E as not actually reflecting a
 changed condition.

1 approach for JH Kelly, but contradicted by the facts of the case. In arriving at his determination
 2 that this was a “late change” project, Dr. Ibbs states, without providing backup calculation or
 3 basis, that a “majority of the hours occurred past the half way point of the Project.” This ignores
 4 the fact that the PG&E directed changes in design, which significantly impacted the work,
 5 occurred at the beginning of construction. *See* Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶89 (IFC
 6 drawings released in April 2017). This also ignores the fact that the schedule for the project was
 7 extended beyond the initial completion date. Dr. Ibbs provides no analysis to support his
 8 determination that the project qualified as a “late change” project, but must do so in order to
 9 support the damages being required. Using the statistics from other “late change” projects –
 10 about which AECOM has no information because none was produced in discovery – Dr. Ibbs
 11 applies a 38.1% productivity loss factor to the entire project, even labor hours that occurred prior
 12 to the “late change[s].” This is demonstrably subjective because if the project was deemed a
 13 “median change” – then the amount of change would be around 25% – a decrease in loss damages
 14 for JH Kelly of over \$1M. The decrease would be even more if the project was deemed to be an
 15 “early change” project.

16 The foregoing highlights why this method is remarkably unreliable and why no court has
 17 endorsed its use as a proper method for calculating productivity loss. This Court should not be
 18 the first to do so. Also, in applying these calculations, Dr. Ibbs does not attribute any direct
 19 causation to the increase in labor hours. Dr. Ibbs simply assumes that all alleged changes on this
 20 project would experience the same loss of productivity as on other projects, despite the fact that
 21 they were performed in different environments, at different times, with different technologies, by
 22 different people in different locations. Dr. Ibbs makes no attempt to calculate the actual
 23 productivity loss on *this* project or to identify the cause(s) of any such loss.

24 It is JH Kelly’s burden to show that AECOM *caused* JH Kelly’s work to be disrupted and
 25 caused a loss of productivity. As detailed above, Dr. Ibbs himself acknowledges this obligation.
 26 Whether or not AECOM actually caused a disruption is at this point mere speculation. It is clear
 27 the point on the curve was chosen, subjectively, to match the loss that needed to be achieved.
 28 Miraculously, the Ibbs Curve shows a loss of \$8.8M, while JH Kelly’s alleged total job cost loss

1 was \$8.9M. Hack Decl. ¶4, Ex. 1, Ibbs 2021 Report, ¶286, Table 20. This is akin to the junk
 2 science of the kind *Daubert* was concerned, and not a method appropriate for presentation to the
 3 jury. As the gatekeeper, the Court must exclude JH Kelly from presenting these opinions to the
 4 jury. Indeed, AECOM's expert testified that the Ibbs Curve is not appropriate for or used in
 5 dispute resolution engagements.

6
 7 Q. Why did you not use the Ibbs curve, for example? Have you ever
 used it?

8 **A. I have used it in various occasions but have not used it in**
 9 **dispute resolution type of engagements.**

10 Q. Why do you use it in some situations but not in dispute
 resolution?

11 **A. Well, I've been teaching at the University of Texas for the last**
 12 **decade, so in the national coursework and covering productivity**
 13 **as a topic, I cover Dr. Ibbs' curve as an industry publication for**
 14 **reference material for the students, but I do not look at or use**
the curve to quantify damages or to do any independent
estimates. I may use it as a check across a couple different things
but not as it relates to dispute resolution engagements.

15 Q. Okay. But you do use it in your coursework in teaching your
 16 students?

17 **A. The Ibbs curve is one of the methods for productivity**
 18 **calculations that is referenced or referred to in the coursework**
that I teach at the University of Texas.

19 Q. Okay. And why do you not use it in dispute resolution?

20 **A. Because it's theoretical. It's not based upon a specific project**
 21 **document or specific facts that are presented during the course**
 22 **of a given project. It's subjective and affords opportunities for**
 23 **that subjectivity to influence the biases of the analyst in**
 24 **performing the work. And they -- the best course of performing**
an analysis is the facts themselves as are presented by both
parties during the course of the project. So I rely heavily on the
data and the facts during the course of the project. The Ibbs
curve does not rely upon that. It's theoretical and is subject to
subjectivity of the analyst.

25 Hack Decl. ¶15, Ex. 12, Deposition of Anthony Gonzales, 185:13-186:21.

26 For these same reasons, this Court should find that the Ibbs Curve study is not appropriate
 27 for admission to the jury.
 28

VI. MCAA FACTOR ANALYSIS IS INHERENTLY SUBJECTIVE, UNRELIABLE, AND IS IMPROPERLY PERFORMED

The Mechanical Contractors Association of American (“MCAA”) approach contains 16 factors recognized by mechanical industry observers as being harmful to labor productivity (e.g. trade stacking, use of overtime). Aligned against those factors are three degrees of severity. The problem with the approach is twofold: first it does not tie causation directly to the job losses and second, it relies on the expert subjective interpretation of the factors – the expert chooses the facts to use and the severity of the factors. Thus, the MCAA factors are not a favored method for quantifying damages. *See Sunshine Constr. & Eng’g, Inc. v. United States*, 64 Fed. Cl. 346, 371 (2005) (in deciding not to apply the MCAA factors in a case involving the construction of buildings, the Court found the MCAA factors were “not recognized as an accepted approach by [expert’s] peers or by any trade association.”). The MCAA factors are “necessarily arbitrary.” *N. Am. Mech., Inc. v. Walsh Constr. Co. II, LLC*, 132 F. Supp. 3d 1064, 1081 (E.D. Wis. 2015). Use of MCAA factors are only appropriate for mechanical workers and not other crafts, including laborers. *Herman B. Taylor Const. Co.*, GSBCA No. 15421, 03-2 B.C.A. (CCH) ¶ 32320 (July 21, 2003). Indeed, at least one federal court has excluded an expert’s proposed testimony based on the MCAA factors by holding that this method fails to satisfy the *Daubert* standard. *See Trane US Inc. v. Yearout Serv., LLC*, No. 5:17-cv-42-MTT, 2019 U.S. Dist. LEXIS 103171, at *18 (M.D. Ga. June 20, 2019) (“Lynn’s testimony on shift work inefficiency lacks foundation, relevance, reliable principles and methods, reliable application, and helpfulness to the jury. It is clearly inadmissible.”). The same analysis applies here.

The best evidence of this arbitrary nature of the factors is Dr. Ibbs’ own reports. Dr. Ibbs prepared an MCAA analysis for JH Kelly in 2019. In that report, he used MCAA factors Overtime, Logistics, Season and Weather Change and Site Access. Using those four factors, in 2019, Ibbs came to the calculation of 49,497 in loss of productivity labor hours as follows:

MCAA Factor	LoP Labor Hours
Overtime	8,509
Logistics	20,850
Season and Weather Change	8,877
Site Access	11,711
	49,947

Hack Decl. ¶6, Ex. 3, Ibbs 2019 Report, ¶287, Table 17.

In his later analysis in 2021, the amount of Loss of Productivity hours decreases significantly to 42,411 hours:

MCAA Factor	Delay & Disruption Craft Labor Hours	
Overtime	8,524	[A]
Logistics	20,870	[B]
Season and Weather Change	7,294	[C]
Site Access	5,723	[D]
	42,411	[E=ΣA:D]

Table 17: IBBS Applied MCAA Factors & Calculated Delay & Disruption Labor Hours

Hack Decl. ¶5, Ex. 1, Ibbs 2021 Report, ¶272, Table 17.

While a lower number of disrupted hours would be favorable to AECOM, the MCAA factor damages actually increased from \$8,484,714 to \$8,624,734. Despite substantially changing the hours, the damages amount increased in order to support the ultimate damages claim by JH Kelly. There are also significant fluctuations in the number of disrupted hours under each factor, despite the work being fully completed for over a year by the time of Dr. Ibbs' 2019 report. As the court can see, this is why MCAA is disfavored. It is not reliable or repeatable.

Further, Dr. Ibbs himself has issued warnings cautioning against the improper use of the MCAA factors but then does exactly what he claims is improper. Dr. Ibbs directs practitioners to "[a]void vague factors such as fatigue, logistics, and joint occupancy." Hack Decl. ¶16, Ex. 13, William Ibbs and Xiaodun Sun, *Use of Mechanical Contractors Association of America Method in Loss of Productivity Claims*, J. Leg. Aff. Dispute Resolut. Eng. Constr., 01816001, at p. 8

(emphasis added). Despite his own conclusion that the logistics factor should be avoided, Dr. Ibbs bases approximately half of his lost labor productivity hours on the logistics factor. Hack Decl. ¶4. Ex. 1, Ibbs 2021 Report, ¶272, Table 17 (20,870 of the 42,411 hours based on logistics). This factor alone comprises \$1,629,738.30. *Id.*

Dr. Ibbs also states “[d]o not blindly rely on the LOP damage percentages contained in the MCAA manual. Those percentages were developed by surveying contractors who have a vested interest in assigning larger percentages to these factors ... Two different people applying the MCAA model to the same disrupted project could arrive at very different LOP percentages because of this lack of definition.” Hack Decl. ¶16, Ex. 13. Dr. Ibbs himself admits that the MCAA methodology is not repeatable and therefore concedes that this analysis is subject to a *Daubert* challenge on that basis. That is one of the inherent problems with the MCAA methodology and why it has been excluded. Also, despite his clear warning that the MCAA percentages are overstated, Dr. Ibbs chose the Logistics factor – which has the highest loss percentage of any factor – and the Weather and Site Access factors – which have the third highest loss percentages. Indeed, for almost two months Dr. Ibbs applied the severe logistics factor of 50% to all labor on the project, in direct contradiction of the very studies which form his analysis. Dr. Ibbs ignores his own advice and therefore his report and the opinion contained therein should be excluded. See *General Elec. Co. v. Joiner*, 522 U.S. 136, 145-47 (1997) (finding that expert reports can be excluded if based on studies standing for conclusions contrary to report). As found by the US Supreme Court, it is proper to exclude an opinion which contradicts the underlying basis for that opinion

Finally, Dr. Ibbs uses “overtime” as part of his analysis despite the fact that the parties’ contract expressly provides that working overtime “shall not constitute a delay, disruption or interference with Subcontractor’s Work.” Hack Decl. ¶18, Ex. 15, Deposition Exhibit 1, Subcontract, at p. 20. Indeed, Dr. Ibbs calculates 8,524 in lost hours or approximately \$665,000 for overtime impacts. Hack Decl. ¶4., Ex. 1, Ibbs 2021 Report, ¶272, Table 17. Since this aspect of the claim is barred as a matter of law, it cannot be used to support a damages amount and it would be improper to allow such evidence to be presented to the jury. Therefore, at a minimum,

the Court should exclude evidence of this \$665,000 in alleged lost productivity relating to overtime.

VII. DR. IBBS CANNOT RELY ON THE TOTAL COST METHOD

Dr. Ibbs asserts that his use of the total cost method is used only to support and “increase confidence in” his other three methodologies. Ex. 1, Ibbs 2021 Report, ¶276. However, in reality, Dr. Ibbs uses these three methodologies to falsely support JH Kelly’s total cost claim. Dr. Ibbs blindly relied on JH Kelly’s own assertion that its performance was near perfect—applying only a .28% factor for JH Kelly’s errors – despite all the evidence to the contrary. As such, JH Kelly’s productivity claim in this litigation is essentially a pure **un**modified total cost claim. AECOM is not aware of any case in California which has allowed for such a pure total cost claim.

As explained in AECOM’s dispositive motion concurrently filed herewith, the total cost method is a generally disfavored method as a means of calculating damages. *Amelco Elec. v. City of Thousand Oaks*, 27 Cal. 4th 228, 243 (2002). “We are aware that we have on a number of occasions expressed our dislike for this method of computing breaches of contract damages, and we do not intend to condone its use as a universal rule.” *J. D. Hedin Constr. Co. v. United States*, 171 Ct. Cl. 70, 86 (1965). “A trial court must use the total cost method with caution and as a last resort.” *Servidone Constr. Corp. v. United States*, 931 F.2d 860, 861 (Fed. Cir. 1991) “This theory [the total cost method] has never been favored by the court and has been tolerated only when no other mode was available and when the reliability of the supporting evidence was fully substantiated.” *WRB Corp. v. United States*, 183 Ct. Cl. 409, 426 (U.S. 1968).

If Dr. Ibbs is allowed to present these subjective and unreliable methodologies, the Court is essentially allowing JH Kelly to present a total cost claim and allowing JH Kelly to bypass its obligation to prove causation. This cannot be permitted. This is especially problematic in the context of this trial where the jury is likely to be persuaded by Dr. Ibbs’ CV and experience. Allowing these analyses to be presented to the jury is extremely prejudicial considering the lack of reliability inherent in these analyses. As set forth herein, Dr. Ibbs used either (1) unaccepted methodologies or (2) accepted methodologies in an acceptable manner to achieve a total cost result. Both are improper. For these reasons, Dr. Ibbs’ opinions should be excluded.

1 **VIII. CONCLUSION**

2 As set forth herein, the opinions of Dr. Ibbs fail the rigorous requirements set forth in
3 *Daubert*. These types of analyses have a high potential for error and an incredibly high risk of
4 manipulation. Even Dr. Ibbs could not replicate the same results between his two reports, thus
5 failing the “testability” requirement in *Daubert*. Due to the inherent unreliability of these
6 opinions, it is respectfully requested that the Court – as the gatekeeper –exclude them.

7
8 Dated: April 14, 2022

TROUTMAN PEPPER HAMILTON
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